

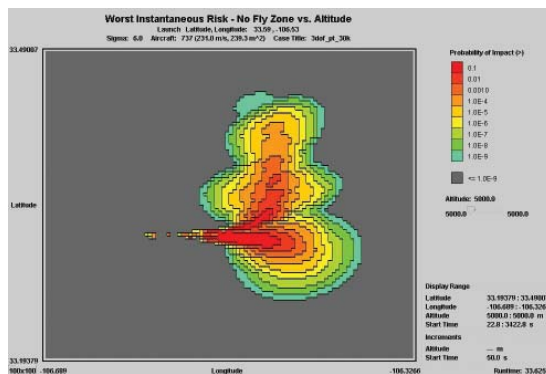


Accurate Characterization of Missile Debris



The interception of a target or the failure/termination of a launch or re-entry vehicle can produce an enormous amount of debris of varying size and mass. As this debris falls back to earth, it poses hazards to anything in its path. The Aircraft Vulnerability Model (AVM) was designed as a range flight safety analysis software tool for use in missile intercept pre-flight planning and near-real time missile flight test operations to determine the risk to aircraft flying near or through the area of operations. AVM propagates the three-dimensional, time-phased debris cloud from the near space impact or failure point to predict the time, location, and degree of debris impact hazards, allowing risk assessments for anything or anyone that might be affected. Timely, prudent steps can then be taken by decision-makers to keep the risks at a low level, and after the event, AVM enables the airspace to be opened sooner.

The Army is currently using AVM at the White Sands Missile Range and it will also be included as part of the analysis suite of software that the Missile Defense Agency will provide to all its ranges for their flight safety analyses. The Air Force and other governmental agencies are currently considering AVM for their operational use. AVM is being continually enhanced by integrating its output data to several geographical display programs and by improving its run-time characteristics.



Phase III IMPACTS

- Over \$1.4M R&D funds contributed by the U.S. Army White Sands Missile Range.
- Over \$100K of non-DoD contributions for further R&D.